

## WHAT IS CLAIMED IS:

1. A hybrid cotton plant designated INTERCOTT-35, representative seed of said hybrid cotton plant having been deposited under ATCC Patent Depository No.: PTA-4831.
2. Seed of said hybrid cotton plant of claim 1.
3. A tissue culture of regenerable cells of said hybrid cotton plant of claim 1.
4. The tissue culture of claim 3, wherein the tissue culture regenerates plants capable of expressing all the morphological and physiological characteristics of said hybrid cotton plant.
5. A tissue culture of claim 4, wherein said tissue culture is regenerated from cells or protoplasts of a tissue selected from the group consisting of seeds, leaves, stems, pollens, roots, root tips, anthers, ovules, petals, flowers, embryos, fibers and bolls.
6. A cotton plant, or its parts, wherein at least one ancestor of said hybrid cotton plant is the cotton plant INTERCOTT-35, said cotton plant capable of expressing at least one trait selected from the group consisting of a tolerance to suboptimal water supply, a tolerance to salinity, a tolerance to suboptimal temperature, a tolerance to suboptimal light, a resistance to Fusarium wilt, a resistance to Verticillium wilt, a resistance to Alternaria leaf spot, an average period of 140 days to 50 percent open boll, a fiber length average not lower than 1.34 inches, a fiber strength average not lower than 36 gram per tex, a fiber fineness average not higher than 3.9 micronaire, tipped oval shaped boll, an average number of 4-5 locules per boll and light yellow

petals.

7. A method of developing a hybrid cotton plant using plant breeding techniques which employ a cotton plant, or its parts, as a source of plant breeding material, the method comprising utilizing cotton plants *Gossypium hirsutum* designated line A-195, and *Gossypium barbadense* designated line R-208 as a source of breeding material.

8. The method of claim 7, wherein the plant breeding techniques are selected from the group consisting of recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

9. A system for developing a hybrid cotton plant using plant breeding techniques, the system comprising cotton plants A-195 and R-208 or parts of said cotton plants as a source of the breeding material.

10. The system of claim 9, wherein at least one of said cotton plants is male sterile.

11. A cotton plant characterized by a combination of traits leading to a commercial yield higher than at least one parent of the cotton plant under growth conditions, selected from the group consisting of suboptimal water supply, suboptimal salinity, suboptimal temperature, suboptimal light, a growth cycle period shorter than 170 days, and infestation of pathogens.

12. The cotton plant of claim 11, wherein said pathogens are selected from the group consisting of *Verticillium* spp., *Fusarium* spp., and *Alternaria* spp.

13. The cotton plant of claim 11, wherein the cotton plant is hybrid cotton plant INTERCOTT-35 and its parents are cotton plants A-195 and R-208.
14. A planted field comprising cotton plants A-195 and R-208.
15. The planted field of claim 14, wherein at least one of said cotton plants is male sterile.
16. The planted field of claim 14, wherein the field is characterized by a planting pattern enabling cross pollination between cotton plants A-195 and R-208.
17. A planted field comprising cotton plants B-195 and R-208.
18. A hybrid cotton plant designated INTERCOTT-51, representative seed of said hybrid cotton plant having been deposited under ATCC Patent Depository No.: PTA-4833.
19. Seed of said hybrid cotton plant of claim 18.
20. A tissue culture of regenerable cells of said hybrid cotton plant of claim 18.
21. The tissue culture of claim 20, wherein the tissue culture regenerates plants capable of expressing all the morphological and physiological characteristics of said hybrid cotton plant.
22. A tissue culture of claim 21, wherein said tissue culture is regenerated from cells or protoplasts of a tissue selected from the group

consisting of seeds, leaves, stems, pollens, roots, root tips, anthers, ovules, petals, flowers, embryos, fibers and bolls.

23. A cotton plant, or its parts, wherein at least one ancestor of said hybrid cotton plant is the cotton plant INTERCOTT-51, said cotton plant capable of expressing at least one trait selected from the group consisting of a tolerance to suboptimal water supply, a tolerance to salinity, a tolerance to suboptimal temperature, a tolerance to suboptimal light, a resistance to Fusarium wilt, a resistance to Verticillium wilt, a resistance to Alternaria leaf spot, an average period of 130 days to 50 percent open boll, a fiber length average not lower than 1.33 inches, a fiber strength average not lower than 34 gram per tex, a fiber fineness average not higher than 3.9 micronaire, tipped oval shaped boll, an average number of 4-5 locules per boll and light yellow petals.

24. A method of developing a hybrid cotton plant using plant breeding techniques which employ a cotton plant, or its parts, as a source of plant breeding material, the method comprising utilizing cotton plants *Gossypium hirsutum* designated line A-151, and *Gossypium barbadense* designated line R-208 as a source of breeding material.

25. The method of claim 24, wherein the plant breeding techniques are selected from the group consisting of recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

26. A system for developing a hybrid cotton plant using plant breeding techniques, the system comprising cotton plants A-151 and R-208 or parts of said cotton plants as a source of the breeding material.

27. The system of claim 26, wherein at least one of said cotton plants is male sterile.

28. A cotton plant characterized by a combination of traits leading to a commercial yield higher than at least one parent of the cotton plant under growth conditions, selected from the group consisting of suboptimal water supply, suboptimal salinity, suboptimal temperature, suboptimal light, a growth cycle period shorter than 160 days, and infestation of pathogens.

29. The cotton plant of claim 28, wherein said pathogens are selected from the group consisting of *Verticillium* spp., *Fusarium* spp., and *Alternaria* spp.

30. The cotton plant of claim 28, wherein the cotton plant is hybrid cotton plant INTERCOTT-51 and its parents are cotton plants A-151 and R-208.

31. A planted field comprising cotton plants A-151 and R-208.

32. The planted field of claim 31, wherein at least one of said cotton plants is male sterile.

33. The planted field of claim 31, wherein the field is characterized by a planting pattern enabling cross pollination between cotton plants A-151 and R-208.

34. A planted field comprising cotton plants B-151 and R-208.

35. A hybrid cotton plant designated INTERCOTT-75, representative seed of said hybrid cotton plant having been deposited under ATCC Patent

Depository No.: PTA-4834.

36. Seed of said hybrid cotton plant of claim 35.
37. A tissue culture of regenerable cells of said hybrid cotton plant of claim 35.
38. The tissue culture of claim 37, wherein the tissue culture regenerates plants capable of expressing all the morphological and physiological characteristics of said hybrid cotton plant.
39. A tissue culture of claim 38, wherein said tissue culture is regenerated from cells or protoplasts of a tissue selected from the group consisting of seeds, leaves, stems, pollens, roots, root tips, anthers, ovules, petals, flowers, embryos, fibers and bolls.
40. A cotton plant, or its parts, wherein at least one ancestor of said hybrid cotton plant is the cotton plant INTERCOTT-75, said cotton plant capable of expressing at least one trait selected from the group consisting of a tolerance to suboptimal water supply, a tolerance to salinity, a tolerance to suboptimal temperature, a tolerance to suboptimal light, a resistance to Fusarium wilt, a resistance to Verticillium wilt, a resistance to Alternaria leaf spot, an average period of 120 days to 50 percent open boll, a fiber length average not lower than 1.32 inches, a fiber strength average not lower than 33 gram per tex, a fiber fineness average not higher than 3.9 micronaire, tipped oval shaped boll, an average number of 4-5 locules per boll and light yellow petals.
41. A method of developing a hybrid cotton plant using plant breeding techniques which employ a cotton plant, or its parts, as a source of

plant breeding material, the method comprising utilizing cotton plants *Gossypium hirsutum* designated line A-175 ATCC , and *Gossypium barbadense* designated line R-208 as a source of breeding material.

42. The method of claim 41, wherein the plant breeding techniques are selected from the group consisting of recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

43. A system for developing a hybrid cotton plant using plant breeding techniques, the system comprising cotton plants A-175 and R-208 or parts of said cotton plants as a source of the breeding material.

44. The system of claim 43, wherein at least one of said cotton plants is male sterile.

45. A cotton plant characterized by a combination of traits leading to a commercial yield higher than at least one parent of the cotton plant under growth conditions, selected from the group consisting of suboptimal water supply, suboptimal salinity, suboptimal temperature, suboptimal light, a growth cycle period shorter than 150 days, and infestation of pathogens.

46. The cotton plant of claim 45, wherein said pathogens are selected from the group consisting of *Verticillium* spp., *Fusarium* spp., and *Alternaria* spp.

47. The cotton plant of claim 45, wherein the cotton plant is hybrid cotton plant INTERCOTT-75 and its parents are cotton plants A-175 and R-208.

48. A planted field comprising cotton plants A-175 and R-208.
49. The planted field of claim 48, wherein at least one of said cotton plants is male sterile.
50. The planted field of claim 48, wherein the field is characterized by a planting pattern enabling cross pollination between cotton plants A-175 and R-208.
51. A planted field comprising cotton plants B-175 and R-208.
52. A hybrid cotton plant designated INTERCOTT-34, representative seed of said hybrid cotton plant having been deposited under ATCC Patent Depository No.: PTA-4831.
53. Seed of said hybrid cotton plant of claim 52.
54. A tissue culture of regenerable cells of said hybrid cotton plant of claim 52.
55. The tissue culture of claim 54, wherein the tissue culture regenerates plants capable of expressing all the morphological and physiological characteristics of said hybrid cotton plant.
56. A tissue culture of claim 55, wherein said tissue culture is regenerated from cells or protoplasts of a tissue selected from the group consisting of seeds, leaves, stems, pollens, roots, root tips, anthers, ovules, petals, flowers, embryos, fibers and bolls.
57. A cotton plant, or its parts, wherein at least one ancestor of said



hybrid cotton plant is the cotton plant INTERCOTT-34, said cotton plant capable of expressing at least one trait selected from the group consisting of a tolerance to suboptimal water supply, a tolerance to salinity, a tolerance to suboptimal temperature, a tolerance to suboptimal light, a resistance to Fusarium wilt, a resistance to Verticillium wilt, a resistance to Alternaria leaf spot, an average period of 125 days to 50 percent open boll, a fiber length average not lower than 1.33 inches, a fiber strength average not lower than 36 gram per tex, a fiber fineness average not higher than 4.0 micronaire, tipped oval shaped boll, an average number of 4-5 locules per boll and light yellow petals.

58. A method of developing a hybrid cotton plant using plant breeding techniques which employ a cotton plant, or its parts, as a source of plant breeding material, the method comprising utilizing cotton plants *Gossypium hirsutum* designated line A-34 , and *Gossypium barbadense* designated line R-208 as a source of breeding material.

59. The method of claim 58, wherein the plant breeding techniques are selected from the group consisting of recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

60. A system for developing a hybrid cotton plant using plant breeding techniques, the system comprising cotton plants A-34 and R-208 or parts of said cotton plants as a source of the breeding material.

61. The system of claim 60, wherein at least one of said cotton plants is male sterile.

62. A cotton plant characterized by a combination of traits leading to

a commercial yield higher than at least one parent of the cotton plant under growth conditions, selected from the group consisting of suboptimal water supply, suboptimal salinity, suboptimal temperature, suboptimal light, a growth cycle period shorter than 160 days, and infestation of pathogens.

63. The cotton plant of claim 62, wherein said pathogens are selected from the group consisting of *Verticillium* spp., *Fusarium* spp., and *Alternaria* spp.

64. The cotton plant of claim 62, wherein the cotton plant is hybrid cotton plant INTERCOTT-34 and its parents are cotton plants A-34 and R-208.

65. A planted field comprising cotton plants A-34 and R-208.

66. The planted field of claim 65, wherein at least one of said cotton plants is male sterile.

67. The planted field of claim 65, wherein the field is characterized by a planting pattern enabling cross pollination between cotton plants A-34 and R-208.

68. A planted field comprising cotton plants B-34 and R-208.

69. A hybrid cotton plant designated INTERCOTT-145, representative seed of said hybrid cotton plant having been deposited under ATCC Patent Depository No.: PTA-4836.

70. Seed of said hybrid cotton plant of claim 69.

71. A tissue culture of regenerable cells of said hybrid cotton plant of claim 69.

72. The tissue culture of claim 71, wherein the tissue culture regenerates plants capable of expressing all the morphological and physiological characteristics of said hybrid cotton plant.

73. A tissue culture of claim 72, wherein said tissue culture is regenerated from cells or protoplasts of a tissue selected from the group consisting of seeds, leaves, stems, pollens, roots, root tips, anthers, ovules, petals, flowers, embryos, fibers and bolls.

74. A cotton plant, or its parts, wherein at least one ancestor of said hybrid cotton plant is the cotton plant INTERCOTT-145, said cotton plant capable of expressing at least one trait selected from the group consisting of a tolerance to suboptimal water supply, a tolerance to salinity, a tolerance to suboptimal temperature, a tolerance to suboptimal light, a resistance to Fusarium wilt, a resistance to Verticillium wilt, a resistance to Alternaria leaf spot, tolerant to Cicadellidae insects, an average period of 130 days to 50 percent open boll, a fiber length average not lower than 1.34 inches, a fiber strength average not lower than 35 gram per tex, a fiber fineness average not higher than 3.9 micronaire, tipped oval shaped boll, an average number of 4-5 locules per boll and light yellow petals.

75. A method of developing a hybrid cotton plant using plant breeding techniques which employ a cotton plant, or its parts, as a source of plant breeding material, the method comprising utilizing cotton plants *Gossypium hirsutum* designated line A-14 , and *Gossypium barbadense* designated line R-205 as a source of breeding material.

76. The method of claim 75, wherein the plant breeding techniques are selected from the group consisting of recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

77. A system for developing a hybrid cotton plant using plant breeding techniques, the system comprising cotton plants A-14 and R-205 or parts of said cotton plants as a source of the breeding material.

78. The system of claim 77, wherein at least one of said cotton plants is male sterile.

79. The system of claim 77, wherein at least one of said cotton plants exhibits a hair cover on leaves and stems of a density higher than that of an Acala type cotton plant.

80. A cotton plant characterized by a combination of traits leading to a commercial yield higher than at least one parent of the cotton plant under growth conditions, selected from the group consisting of suboptimal water supply, suboptimal salinity, suboptimal temperature, suboptimal light, a growth cycle period shorter than 160 days, and infestation of pathogens.

81. The cotton plant of claim 80, wherein said pathogens are selected from the group consisting of *Verticillium* spp., *Fusarium* spp., *Alternaria* spp and *Cicadellidae* spp.

82. The cotton plant of claim 80, wherein the cotton plant is hybrid cotton plant INTERCOTT-145 and its parents are cotton plants A-14 and R-205.

83. A planted field comprising cotton plants A-14 and R-205.
84. The planted field of claim 83, wherein at least one of said cotton plants is male sterile.
85. The planted field of claim 83, wherein the field is characterized by a planting pattern enabling cross pollination between cotton plants A-14 and R-205.
86. A planted field comprising cotton plants B-14 and R-205.
87. A hybrid cotton plant designated INTERCOTT-83, representative seed of said hybrid cotton plant having been deposited under ATCC Patent Depository No.: PTA-4835.
88. Seed of said hybrid cotton plant of claim 87.
89. A tissue culture of regenerable cells of said hybrid cotton plant of claim 87.
90. The tissue culture of claim 89, wherein the tissue culture regenerates plants capable of expressing all the morphological and physiological characteristics of said hybrid cotton plant.
91. A tissue culture of claim 90, wherein said tissue culture is regenerated from cells or protoplasts of a tissue selected from the group consisting of seeds, leaves, stems, pollens, roots, root tips, anthers, ovules, petals, flowers, embryos, fibers and bolls.
92. A cotton plant, or its parts, wherein at least one ancestor of said

hybrid cotton plant is the cotton plant INTERCOTT-83, said cotton plant capable of expressing at least one trait selected from the group consisting of a tolerance to suboptimal water supply, a tolerance to salinity, a tolerance to suboptimal temperature, a tolerance to suboptimal light, a resistance to Fusarium wilt, a resistance to Verticillium wilt, a resistance to Alternaria leaf spot, an average period of 125 days to 50 percent open boll, a fiber length average not lower than 1.33 inches, a fiber strength average not lower than 34 gram per tex, a fiber fineness average not higher than 3.6 micronaire, tipped oval shaped boll, an average number of 4-5 locules per boll and light yellow petals.

93. A method of developing a hybrid cotton plant using plant breeding techniques which employ a cotton plant, or its parts, as a source of plant breeding material, the method comprising utilizing cotton plants *Gossypium hirsutum* designated line A-83 , and *Gossypium barbadense* designated line R-208 as a source of breeding material.

94. The method of claim 93, wherein the plant breeding techniques are selected from the group consisting of recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

95. A system for developing a hybrid cotton plant using plant breeding techniques, the system comprising cotton plants A-83 and R-208 or parts of said cotton plants as a source of the breeding material.

96. The system of claim 95, wherein at least one of said cotton plants is male sterile.

97. A cotton plant characterized by a combination of traits leading to

a commercial yield higher than at least one parent of the cotton plant under growth conditions, selected from the group consisting of suboptimal water supply, suboptimal salinity, suboptimal temperature, suboptimal light, a growth cycle period shorter than 160 days, and infestation of pathogens.

98. The cotton plant of claim 97, further characterized by a naked Pima type seed coat.

99. The cotton plant of claim 97, wherein said pathogens are selected from the group consisting of *Verticillium* spp., *Fusarium* spp., and *Alternaria* spp.

100. The cotton plant of claim 97, wherein the cotton plant is hybrid cotton plant INTERCOTT-83 and its parents are cotton plants A-83 and R-208.

101. A planted field comprising cotton plants A-83 and R-208.

102. The planted field of claim 101, wherein at least one of said cotton plants is male sterile.

103. The planted field of claim 101, wherein the field is characterized by a planting pattern enabling cross pollination between cotton plants A-83 and R-208.

104. A planted field comprising cotton plants B-83 and R-208.

105. A method of developing a hybrid cotton plant using plant breeding techniques, the method comprising utilizing a first cotton plant selected from the group consisting of A-195, A-151, A-175, A-34, A-14 and A-83, and a second cotton plant selected from the group consisting of R-205 and

R-208, as sources of breeding material.

106. A system for developing a hybrid cotton plant using plant breeding techniques, the system comprising utilizing a first cotton plant selected from the group consisting of A-195, A-151, A-175, A-34, A-14 and A-83, and a second cotton plant selected from the group consisting of R-205 and R-208, as sources of breeding material.